

# Politics Trump Science: The Collision Between No Child Left Behind and the Individuals with Disabilities Education Act

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*The alignment between No Child Left Behind and the Individuals with Disabilities Education Act can be best characterized as a collision. In the name of pseudo-science, Congress has redefined "learning disabilities" in a way that is likely to delay effective intervention, harming the basic literacy skills of many young people. Congress and the United States Department of Education should convene a panel of experts to develop an effective, national program for early intervention for children with learning disabilities. Science must trump politics for once.*

In a provocative book, *The Republican War on Science*, published in 2006, Chris Mooney details the decreasing influence of scientists within the federal government since President Nixon fired his science advisors in 1973.<sup>1</sup> The federal government has ignored or distorted consensus views among scientists on issues such as stem cell research, climate change, evolution, sex education, product safety, and environmental regulation.<sup>2</sup> Absent from Mooney's list, however, is how federal education policy under both Republican and Democratic administrations have failed to respond to scientific developments<sup>3</sup> in the field of learning dis-

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1. CHRIS MOONEY, *THE REPUBLICAN WAR ON SCIENCE* (2006); see also Chris Mooney, *The Top Science Post in the White House Needs to be Pulled from the Shadows of the Cold War and Reestablished as a Cornerstone of Crucial, Rational Advice for the U.S. Presidency*, SEED MAGAZINE, January 3, 2008, available at [http://seedmagazine.com/content/article/the\\_science\\_adviser/](http://seedmagazine.com/content/article/the_science_adviser/) (recounting Nixon firing his science advisors over disagreements about the viability of the Supersonic Transport program and other matters).

2. MOONEY, *supra* note 1.

3. See generally SALLY SHAYWITZ, *OVERCOMING DYSLEXIA: A NEW AND COMPLETE SCIENCE-BASED PROGRAM FOR READING PROBLEMS AT ANY LEVEL* (2003).

abilities.<sup>4</sup> This failure has resulted in policies that cause school districts to identify children with learning disabilities so late, if at all, that effective intervention is nearly impossible under the Individuals with Disabilities Education Act ("the IDEA").<sup>5</sup>

Research scientists have concluded that the earliest possible intervention for students with learning disabilities is crucial for long-term success,<sup>6</sup> because unremediated deficits are likely to grow more profound over time.<sup>7</sup> This problem is termed the "Matthew effect" to signal that early achievement deficits spawn faster rates of subsequent deficits.<sup>8</sup> When the Education for All Handicapped Children Act ("EAHCA") (the precursor to the IDEA) was passed in 1975,<sup>9</sup> diagnostic instruments for predicting the existence of learning disabilities in young children "possessed a predictive validity of close to zero."<sup>10</sup> Effective, early interven-

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4. Under the Individuals with Disabilities Education Act, "the IDEA," a learning disability is "a disorder in 1 or more of the basic psychological processes involved in understanding or using language, spoken or written, which disorder may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations." 20 U.S.C. § 1401 (30)(A) (2006). The IDEA covers children with various disabilities. A learning disability is one of ten disabilities covered by the IDEA. The others are: "mental retardation, hearing impairments (including deafness), speech or language impairments, visual impairments (including blindness), serious emotional disturbance . . . orthopedic impairments, autism, traumatic brain injury, [and] other health impairments." 20 U.S.C. § 1401(3)(A)(i). Although early intervention is important for children in each of these categories of disabilities, this article focuses on learning disabilities in reading—the most common disability covered by the IDEA. See *infra* Table 2.

5. 20 U.S.C. §§ 1400 et seq.

6. See LaTonya Waters & Sandra Harris, *Exploration of the Lived Experiences of Illiterate African American Adults*, 33 W. J. BLACK STUDIES 250, 256 (2009) (finding that "school experiences which are not caring and supportive, compounded by low parent education in the home, may have profound results for children, such as literacy"); Nancy T. Fisher & Leonard C. Schneider, *Literacy Education and the Workforce*, 82 J. JEWISH COMMUNAL SERVICE 210, 211 (2007) (noting that "approximately 22 of U.S. adults scored at Literacy Level One, indicating that the individual may be unable to perform such simple tasks as determining the correct amount of medicine to give a child from information printed on a package or locating the time of a meeting on a form"); David I. Shalowitz & Michael S. Wolf, *Shared Decision-Making and the Lower Literate Patient*, INTERNATIONAL AND COMPARATIVE HEALTH LAW AND ETHICS: A 2-YEAR RETROSPECTIVE 760 (2004) (discussing barriers to shared decision-making and their consequences for patient care for lower literate patients).

7. See Keith Stanovich, *Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy*, XXI READING RES. Q. 360, 381 (1986), available at [http://www.psychologytoday.com/files/u81/Stanovich\\_\\_1986\\_.pdf](http://www.psychologytoday.com/files/u81/Stanovich__1986_.pdf).

8. The "Matthew effect" is named after the Gospel passage: "For unto every one that hath shall be given, and he shall have abundance: but from him that hath not shall be taken away even that which he hath." *Id.*

9. See Education for All Handicapped Children Act of 1975 (EAHCA), Pub. L. No. 94-142, 89 Stat. 773 (current version at 20 U.S.C. §§ 1400 et seq.) [hereinafter EAHCA].

10. Russell Gersten & Joseph A. Dimino, *RTI (Response to Intervention): Rethinking special education for students with reading difficulties (yet again)*, 41 READING RES. Q. 99, 100 (2006).

tion was therefore all but impossible in 1975. But, today, schools can administer effective screening tests as early as kindergarten and first grade to determine which children are likely to have a learning disability so that early intervention can occur before large educational deficits have materialized.<sup>11</sup>

This Article argues that federal and state educational policy should rely on recent scientific developments to help schools detect earlier and more accurately which students have disabilities so that they can receive effective intervention under the IDEA.<sup>12</sup> Learning disabilities are neurobiological in origin; the most common learning disability, often called “dyslexia,”<sup>13</sup> results in deficits in the recognition of the phonological component of language, frequently leading to problems in reading comprehension.<sup>14</sup> This article focuses on the importance of diagnosing learning disabilities in reading<sup>15</sup> at the earliest possible age because of the importance of reading to life-long success and the breadth of scientific knowledge currently available about this disability.<sup>16</sup>

The purpose of the IDEA is to ensure that students with disabilities receive an appropriate<sup>17</sup> education under an individualized education

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11. See *infra* Part V. Some learning disabilities can be seen with Magnetic Resonance Imaging, although, at this time, that is not considered an appropriate diagnostic instrument. See SHAYWITZ, *supra* note 3, at 83 (2003) (reporting that an MRI can detect irregularities in brain composition and function in individuals with dyslexia).

12. The learning disability classification is actually used for two distinct purposes: (1) how to decide who should receive remediation under the special education laws and (2) who should receive testing accommodations. This article only discusses the first issue. For a discussion of the second issue, see Ruth Colker, *Extra Time as an Accommodation*, 69 U. PITT. L. REV. 413 (2008).

13. See generally G. Reid Lyon, *Learning Disabilities*, 6 THE FUTURE OF CHILDREN: SPECIAL EDUCATION FOR STUDENTS WITH DISABILITIES 54 (1996), available at [http://www.princeton.edu/futureofchildren/publications/docs/06\\_01\\_03.pdf](http://www.princeton.edu/futureofchildren/publications/docs/06_01_03.pdf). The definition of dyslexia is:

[A] specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.

G. Reid Lyon, *Defining Dyslexia, Comorbidity, Teachers' Knowledge of Language and Reading: A Definition of Dyslexia*, 53 ANNALS OF DYSLEXIA 1, 2 (2003).

14. The deficits can be in “the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations.” 20 U.S.C. § 1400(30)(A) (2006).

15. The IDEA uses the phrase “learning disability in reading” rather than “dyslexia” so this article uses that term to be consistent with the IDEA. See 20 U.S.C. § 1400(30)(A).

16. See generally SHAYWITZ, *supra* note 3.

17. The IDEA does not provide a student with the right to an “equal” education, only a free, “appropriate” public education. See 20 U.S.C. § 1401(9) (defining “free appropriate public education”).

program ("IEP").<sup>18</sup> The IEP takes into account the barriers<sup>19</sup> they may face due to their disabilities as well as their individualized educational needs.<sup>20</sup> If principles of universal design<sup>21</sup> are not sufficient to remove barriers<sup>22</sup> and allow students with disabilities to receive an appropriate education in the regular classroom, they are entitled to receive the benefits of assistive technology<sup>23</sup> or related services.<sup>24</sup> Under the IDEA, a student who is performing at grade level can be disabled,<sup>25</sup> and therefore entitled to an IEP, if the disability causes an adverse educational effect.<sup>26</sup>

Between 1975 and 2011, the percentage of children classified as learning disabled under federal special education law has oscillated widely. In 1975, under the EAHCA,<sup>27</sup> Congress insisted that the number of children classified as learning disabled be capped at one-sixth of all disabled children.<sup>28</sup>

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18. 20 U.S.C. § 1401(14) ("a written statement for each child with a disability that is developed, reviewed, and revised in accordance with section 1414(d) of this title").

19. These barriers can be man-made. Thus, a school with steps to enter might need to build a ramp for a student who uses a wheelchair. Had the school been originally built without stairs then a ramp would not be necessary. For a student with a learning disability, a teacher's method of testing could be a barrier.

20. See 20 U.S.C. § 1499(d) ("The purposes of this chapter are (1)(A) to ensure that all children with disabilities have available to them a free appropriate public education that emphasizes special education and related services designed to meet their unique needs and prepare them for further education, employment, and independent study.").

21. See 29 U.S.C. § 3002 (2006) (defining "universal design"); see also 20 U.S.C. § 1401(35) (cross-referencing 29 U.S.C. § 3002 within the IDEA).

22. For example, a timed test might not allow the student to demonstrate his or her knowledge and therefore become an educational barrier. If a test is not timed then the student might be able to take it under the same conditions as the rest of the class. See generally Colker, *supra* note 12.

23. See 20 U.S.C. § 1401(1) (defining "assistive technology device"). For example, a student with a hearing impairment may receive the benefit of assistive technology, such as an appropriate amplification device, to help him or her access classroom instruction. See 34 C.F.R. § 300.34(c)(1) (2013) (describing audiology services).

24. See 20 U.S.C. § 1401(26) (defining "related services"). The student may also receive related services, such as speech and language therapy, to help him or her attain adequate communication skills. See generally 34 C.F.R. § 300.34(a) (listing possible related services).

25. See 34 C.F.R. § 300.101(b)(c)(1) (providing that a child is entitled to a free appropriate public education "even though the child has not failed or been retained in a course or grade, and is advancing from grade to grade").

26. See, e.g., 28 C.F.R. § 300.8(c)(3) ("Deafness means a hearing impairment . . . that adversely affects a child's educational performance.") (emphasis added).

27. See EAHCA, *supra* note 9.

28. 121 CONG. REC. 25,531 (daily ed. July 29, 1975). That limit was likely based on skepticism about the existence of certain invisible disabilities. For a discussion of the problem of invisible disabilities, see generally Katharina Heyer, *A Disability Lens on Sociological Research: Reading Rights of Inclusion from a Disability Studies Perspective*, 32 LAW & SOC. INQUIRY 261 (2007). That skepticism often continues today for learning disabilities. See MARK KELMAN & GILLIAN LESTER, *JUMPING THE QUEUE: AN INQUIRY INTO THE LEGAL TREATMENT OF STUDENTS WITH LEARNING DISABILITIES* (1998).

This limit was lifted in 1977<sup>29</sup> and the percentage of children classified as learning disabled grew to 45% of all children with disabilities by 2004.<sup>30</sup> It then declined to 40% by 2011 as a result of 2004 amendments to the IDEA with huge variations on a state-by-state basis.<sup>31</sup>

From 1977 to 2004, federal regulations provided that school districts should classify a child as having a learning disability in reading when the child had a “severe discrepancy”<sup>32</sup> between his or her achievement in reading and overall aptitude. The theory behind the severe discrepancy model was that the student’s achievement was unexpectedly low in light of the student’s aptitude so that another factor—disability—likely explained the low achievement score.

Meanwhile, Congress enacted No Child Left Behind (“NCLB”) in 2001.<sup>33</sup> The purpose of NCLB is to ensure that school districts make “adequate yearly progress” to attain academic standards as measured by state assessments.<sup>34</sup> To facilitate making adequate yearly progress, schools typically offer remedial education to struggling students so that they can score as proficient on state assessments. If schools are not able to make adequate yearly progress then they must offer supplemental education to struggling students or, in some cases, allow the students to transfer to another school.<sup>35</sup>

In 2004, Congress amended the IDEA to permit school districts to offer the “Response to Intervention” (“RTI”) approach to determine which students have learning disabilities.<sup>36</sup> The movement to RTI was not based on new scientific knowledge about learning disabilities.<sup>37</sup> Instead, it was made to align the IDEA with NCLB so that school districts could save money by using the resources of both statutes to pro-

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29. See 42 Fed. Reg. 65083 (Dec. 29, 1977) (limit lifting once the federal government promulgated regulations defining a learning disability).

30. See *infra* Table 2.

31. See *infra* Table 2.

32. See 42 Fed. Reg. 65083 (Dec. 29, 1977).

33. No Child Left Behind Act of 2001, Pub. L. No. 107-110, 115 Stat. 1425 (2002) (codified as amended in scattered sections of 20 U.S.C.), available at <http://www2.ed.gov/policy/elsec/leg/esea02/107-110.pdf>.

34. See 20 U.S.C. § 6311(b) (2006) (defining academic standards, academic assessments and accountability); see also 20 U.S.C. § 6311(b)(2)(B) (defining “adequate yearly progress”).

35. See Robert Linn et al., *Accountability Systems: Implications of Requirements of the No Child Left Behind Act of 2001*, 31 EDUC. RESEARCHER 3 (2012).

36. See 20 U.S.C. § 1414(b)(6)(B) (“In determining whether a child has a specific learning disability, a local educational agency may use a process that determines if the child responds to scientific, research-based intervention as part of the evaluation procedures described in paragraphs (2) and (3).”).

37. See *infra* Parts IV & V.

vide extra assistance to students who were not meeting grade-level expectations.<sup>38</sup>

Unfortunately, this alignment could be better characterized as a collision. Under RTI, students are classified as learning disabled only *after* they have participated in a process of increasingly intense intervention and are still not able to attain grade-level expectations.<sup>39</sup> This approach often delays individualized intervention, misses students with above-average aptitudes who have learning disabilities, and, despite its name, does not provide schools with sufficient information to develop an appropriate intervention strategy.<sup>40</sup>

In recent years, there has been an emerging chorus of criticism of NCLB.<sup>41</sup> Nearly half of all schools missed their yearly targets, suggesting that the lowest-performing schools are still not teaching children adequately.<sup>42</sup> Further, some notorious cheating scandals have highlighted problems with a focus on rating schools based on student test performance.<sup>43</sup> Largely absent from this discussion, however, has been criticism of the attempt to align the IDEA with NCLB by forcing states to accept RTI as a method of identifying children as learning disabled under the IDEA.<sup>44</sup>

The attempt to align the IDEA and NCLB is a mistake, because the statutes serve different purposes. An NCLB remedial program seeks to help students score proficiently on a state standardized test;<sup>45</sup> an IEP

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38. See *infra* Part IV.

39. According to the United States Department of Education, the characteristics of an RTI framework are: (1) students receive high quality research-based instruction in their general education setting; (2) continuous monitoring of student performance; (3) all students are screened for academic and behavioral problems; and (4) multiple levels (tiers) of instruction that are progressively more intense, based on the student's response to instruction. Memorandum from Melody Musgrove to State Directors of Special Education, U.S. DEP'T OF EDUC. (Jan. 21, 2010), <http://www.wrightslaw.com/info/rti.osep.memo.0111.pdf>; see also 34 C.F.R. § 300.309 (2013) (regulations governing identification of a specific learning disability using RTI).

40. See *infra* Part III.

41. *Criticism of No Child Left Behind*, FINDLAW, <http://education.findlaw.com/curriculum-standards-school-funding/criticism-of-no-child-left-behind.html> (last visited Dec. 24, 2012).

42. See Motoko Rich, "No Child" Law Whittled Down by White House, N.Y. TIMES, July 6, 2012, at A1, available at <http://www.nytimes.com/2012/07/06/education/no-child-left-behind-whittled-down-under-obama.html?pagewanted=all>.

43. *Id.*

44. But see Michael Metz-Topodas, Comment, *Testing—The Tension Between the No Child Left Behind Act and the Individuals with Disabilities Education Act*, 79 TEMP. L. REV. 1387 (2006) (discussing some of the tension between NCLB and the IDEA).

45. See Robert Linn et al., *Accountability Systems: Implications of Requirements of the No Child Left Behind Act of 2001*, 31 EDUC. RESEARCHER 3 (2012).

seeks to help a specific student learn to overcome his or her disability to reach individually specified goals.<sup>46</sup> Put simply, it is *schools* that seek to make adequate yearly progress, as measured by performance on state assessments, under the NCLB; it is the *student* who seeks to make adequate progress, as measured by his or her attainment of individually-designed set of goals, under the IDEA. Whether a student earns a proficient score on a state assessment is rarely a factor in determining if an IEP is effective under the IDEA. We should not expect the IDEA and NCLB to select the same students to receive extra assistance—or even the same kind of assistance—because their target population and goals are quite different.

Despite these problems with the alignment between NCLB and IDEA, there were good reasons for Congress to abandon the discrepancy model in 2004 as the exclusive approach for determining if children have learning disabilities in reading. The discrepancy model was based on scientific studies that have since been discredited.<sup>47</sup> Unfortunately, the solution of aligning the IDEA with NCLB by adopting the RTI approach, while politically convenient, was no solution at all.

A genuine focus on scientific principles leads to the conclusion that both the discrepancy model and RTI, as mechanisms for determining which children have learning disabilities under the IDEA, should be eliminated. They should be replaced with diagnostic instruments that are implemented before second grade and seek to identify which children are struggling with specific components of the reading process due to underlying neurological impairments. We should identify children with neurological impairments that make reading difficult *before* they fall behind in reading. Just as we assess a child's hearing or vision with well-accepted diagnostic instruments, and implement accommodations and services in anticipation of the problems the child may face in the primary grades, we should assess a child's neurological impairment through universally accepted diagnostic instruments and implement accommodations and services *before* the child fails. In other words, the IDEA intervention should be able to take place *before* a child is found eligible for NCLB intervention because he or she did not attain a proficient score on a state assessment.

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46. See 20 U.S.C. § 1414(d) (2006) (setting forth requirements for Individualized Education Programs).

47. See *infra* Part II.

Part I of this article provides a general overview of the discrepancy and RTI approaches. Part II traces the historical development of the category of learning disabilities in reading, often called “dyslexia,” within science. Part III discusses the legal development of the category of learning disabilities in reading. Part IV outlines the changes in that legal classification system since 2004 in an attempt to align the IDEA and NCLB on the basis of wishful thinking rather than scientific evidence. Part V suggests how we might develop a better approach to determining who should receive the most intensive remediation resources under the IDEA, based on the available scientific evidence, because they are learning disabled in reading. Part VI concludes.

## I. DISCREPANCY VERSUS RTI OVERVIEW

Because this article discusses two different approaches (i.e., discrepancy and RTI) to classifying students as learning disabled, it is helpful to begin with an overview of those approaches.

The discrepancy approach was defined by federal regulations promulgated in 1977. It allowed a school district team to determine that a child has a specific learning disability if “the team finds that a child has a severe discrepancy between achievement and intellectual ability in . . . reading comprehension.”<sup>48</sup> Let us assume that the school district has implemented that regulation by stating that a child is likely to have a learning disability in reading if there is at least a discrepancy of one standard deviation between aptitude and reading achievement.<sup>49</sup>

We can understand how the discrepancy approach is implemented by following four hypothetical children. Table 1 presents the aptitude scores as well as the second and fourth grade reading scores for four hypothet-

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48. 42 Fed. Reg. 65083 (Dec. 29, 1977).

49. States have historically varied with respect to how much deviation from the mean they require in order to hypothesize that a child has a learning disability. Two standard deviations from the mean is commonly used in statistics to reflect a 95 percent confidence interval. One standard deviation merely reflects a 68 percent confidence interval or what might be called a mere trend. Because the IQ-achievement discrepancy is merely data used to generate a hypothesis about the possibility of a learning disability, many states do not require a two standard deviation discrepancy before considering whether a child has a learning disability. For discussion of state-by-state variation, see Ruth Colker, *The Learning Disability Mess*, 20 J. GENDER, SOC. POL’Y & LAW 85 (2011). For the purpose of this discussion, I have given the child a single achievement score. A school district is likely to have given multiple tests before concluding a child is performing below grade level in reading.



**Table 1. Reading Scores in Second and Fourth Grade**

	2nd Grade Reading Score (Mean = 1100; 1 SD = 15 points)	IQ Score (mean = 100) 1 SD = 15 points)	Discrepancy Between Reading and IQ in 2nd Grade	4th Grade Reading Score	Discrepancy Between Reading and IQ in 4th Grade
Child A	85	100	1 SD (15 points)	90	< 1 SD (10 points)
Child B	85	95	< 1 SD (10 points)	80	1 SD (15 points)
Child C	85	90	< 1 SD (5 points)	80	< 1 SD (10 points)
Child D	95	110	1 SD (15 points)	90	> 1 SD (20 points)

ical children: A, B, C, and D. One standard deviation is a standard score of 15 on the administered tests. Thus, a child is considered to meet the discrepancy definition of learning disability in reading if the child’s achievement score in reading is at least 15 points lower than the child’s aptitude score.

In second grade, Child A scores 85 on the reading achievement test and scores 100 on the aptitude test. Because Child A scores one standard deviation (i.e., 15 points) in reading lower than one would expect based on his aptitude, the school district recommends that he be classified as learning disabled<sup>50</sup> in reading and receive an IEP to assist him with his reading pursuant to the IDEA.<sup>51</sup> If intervention is successful and his reading scores improve to a 90 by fourth grade, he might be taken off an IEP in fourth grade.

In second grade, Child B scores 85 on the reading achievement test and 95 on the aptitude test. The school district may be reluctant to classify Child B as learning disabled, because she scores less than one standard deviation in reading lower than one would expect based on her aptitude; the school district may be hesitant to needlessly identify a young student as disabled.<sup>52</sup> If her reading comprehension declines to an 80 by

50. The term “specific learning disabilities” is the technical term used in the special education statutes but the term “learning disabilities” is also often found in special education law literature. This article uses both terms interchangeably.

51. 20 U.S.C. §§ 1400 et seq. (2006).

52. Russell Gersten & Joseph A. Dimino, *RTI (Response to Intervention): Rethinking special education for students with reading difficulties (yet again)*, 41 READING RES. Q. 99, 100 (2006).

fourth grade, she might qualify as disabled under the discrepancy model. However, if intervention does not begin until fourth grade, her prognosis is worse than that for Child A because research reflects that reading intervention is most likely to be effective if it occurs before second grade.<sup>53</sup>

In second grade, Child C also scores 85 on the reading achievement test but scores only a 90 on the aptitude test. Although Child C reads no better than Children A and B, he does not meet the discrepancy definition for learning disabled in second or fourth grade because of his comparatively lower aptitude. Under the discrepancy model, he will not be classified as disabled and will not receive an *individualized* educational program or IEP although he may receive extra help under NCLB<sup>54</sup> if he does not score as proficient on state assessments.

Child D, in second grade, scores a 95 on reading achievement and a 110 on aptitude. She would likely qualify for an IEP under the discrepancy model even though she is reading better than Children A, B or C, because of her comparatively higher aptitude. Before the school district can implement an IEP for Child D, however, let us imagine that her family moves across the border to a neighboring state. The new school district informs Child D's parents that they do not use the "discrepancy model" for defining a learning disability.

The new school district uses the RTI model. Under this model, they offer extra resources to all students who fall below grade level expectations, as measured by state assessments, but do not classify any students as "learning disabled" until they determine if general classroom intervention assists that child. They use fifteen percent of their special education funding to support RTI, as permitted by Congress.<sup>55</sup>

They follow the RTI model as described in Department of Education regulations promulgated to enforce the 2004 Amendments to the IDEA. The school-based team can classify a child as learning disabled if "[t]he child does not make sufficient progress to meet age or State-approved grade-level standards [in a subject area] when using a process based on the child's response to scientific, research-based intervention."<sup>56</sup> These

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53. Karla Stuebing et al., *Validity of IQ-Discrepancy Classifications of Reading Disabilities: A Meta Analysis*, 39 AM. EDUC. RES. J. 469, 476 (2002).

54. No Child Left Behind Act of 2001, Pub. L. No. 107-110, 115 Stat. 1425 (2002) (codified as amended in scattered sections of 20 U.S.C.) An extended critique of No Child Left Behind is beyond the scope of this article.

55. 20 U.S.C. § 1413(f)(1).

56. 34 C.F.R. § 300.309(a)(2)(i) (2013).

regulations further require that a child cannot be classified as learning disabled until the school district has engaged in “[d]ata-based documentation of repeated assessments of achievement at reasonable intervals, reflecting formal assessment of student progress during instruction, which was provided to the child’s parent.”<sup>57</sup> Under the RTI approach, the child must therefore not be meeting grade-level standards in order to be possibly identified. Further, low performance is not enough to trigger special education resources. Instead, the child must be monitored over time to see what kind of progress the child makes.

Because Child D scores a 95 on the reading achievement test, the school district considers her to be meeting classroom expectations. She is not eligible for extra assistance at this time under RTI. Without intervention, one can predict that the discrepancy between Child D’s reading and aptitude might increase but she is not likely to qualify for extra assistance under RTI unless her reading score drops below 85.

Let us also imagine that the families of Children A, B and C consider moving to the state using the RTI model for learning disability classification. Because of their children’s low achievement scores (an 85), they are told that their children would be eligible for tiered monitoring with general classroom assistance but not an IEP.<sup>58</sup> This tiered approach typically takes a minimum of six months and sometimes takes as long as two years before the child is found eligible for special education and related services and receives an IEP.<sup>59</sup> The school district would likely ask the parents to be patient as it attempted to collect data about their children’s performances over an extended period of time. Their aptitudes would not be a factor in the determination of whether they are learning disabled. One cannot predict whether any of these children would qualify for special education under the RTI approach but Table 2 reflects that they will be less likely to be classified as learning disabled under RTI than under the discrepancy approach.

These stories are simplistic<sup>60</sup> and do not fully describe how school districts operate when they decide whether to classify students as learning

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57. 34 C.F.R. § 300.309(b).

58. See *supra* note 54.

59. Because of this pattern of RTI causing delays in identification, the United States Department of Education issued a memorandum counseling school districts to avoid such delays. See Memorandum from Melody Musgrove to State Directors of Special Education, *supra* note 39.

60. One way in which these stories are simplistic is that IQ tests need to be individually administered to be accurate. So, the school districts could not have used one classroom test to classify students as disabled. More testing is required.

Table 2. IDEA Disability Classification Over Time<sup>61</sup>

	2005: All Disabilities	2005: Specific Learning Disabilities	2011: All Disabilities	2011: Specific Learning Disabilities
California	609,665	312,622 (51.2%)	605,549	277,827 (45.8%)
Florida	364,566	178,488 (48.9%)	321,477	140,880 (43.8%)
Illinois	287,990	140,861 (48.9%)	256,013	108,297 (42.3%)
Michigan	219,317	94,646 (43.1%)	188,948	72,979 (38.6%)
New Jersey	230,056	104,134 (45.2%)	207,010	79,454 (38.3%)
New York	389,125	174,692 (44.8%)	388,237	154,533 (39.8%)
Ohio	243,745	100,563 (41.2%)	235,160	98,904 (42.0%)
Pennsylvania	262,769	144,224 (54.8%)	262,241	125,624 (47.9%)
Texas	467,169	243,509 (52.1%)	398,919	172,148 (43.1%)
50 states and D.C.	6,021,462	2,727,802 (45.3%)	5,785,203	2,354,790 (40.7%)

disabled in reading. Classification decisions are made by a team and reflect much more information than a single test. Actual classroom performance, on a day-to-day level, would be an important topic for discussion but those discussions often do not occur unless the test scores suggest that a team meeting should take place.

These hypothetical examples, however, reflect the declining trend in learning disability classification since school districts began to replace the discrepancy model with RTI. That change over time is reflected in Table 2, which includes figures for the largest states as well as cumulative data for all fifty states and the District of Columbia. The decline in the overall number of students classified as disabled (236,259) is largely attributable to the decline in the number of students classified as learning disabled (373,012) although there is no reason to believe there are, in fact, fewer students who are truly learning disabled in 2011 than 2005.

61. Data compiled from Data Accountability Center, Individuals with Disabilities Act (IDEA) Data, *Part B Data & Notes*, <https://www.ideadata.org/PartBData.asp> (last visited July 27, 2013).

The subjectivity of this classification system becomes more evident when one examines differences on a state-by-state basis. Despite the data from Table 2, it is hard to believe there are really more students with learning disabilities (as a percentage of all students with disabilities) in Pennsylvania than in Michigan or New Jersey in 2011. And it is hard to understand why the percentage of students with learning disabilities would remain stable in Ohio from 2005 to 2011 but decline by nine percent in Texas. These differences likely reflect inconsistent judgments about the identification of which students have learning disabilities irrespective whether states use the discrepancy or RTI approaches.

Although the justification for RTI, as we will see, was the expansion of the availability of an IEP to students who might not have high IQs, no such expansion has occurred. The number of students classified as learning disabled declined in both absolute (i.e., number of students identified) and relative terms (i.e., percentage of students with disabilities) from 2005 to 2011. The movement from the discrepancy model to the RTI model seems to be increasing the likelihood that students are not identified as having learning disabilities in reading. Further, as we will see, both approaches are flawed, because they cannot be justified by what the scientific community knows about learning disabilities.

## II. HISTORY OF IDENTIFYING LEARNING DISABILITIES IN READING

Professor Berlin of Stuttgart, Wiesbaden, coined the term “dyslexia” in 1887 to describe six adult patients who had “very great difficulty in interpreting written or printed symbols”<sup>62</sup> even though they had normal visual acuity. In 1895, Dr. James Hinshelwood, an ophthalmologist in Great Britain, began discussing a condition that he called “word blindness” to describe adult patients who lost their ability to identify words or letters while sometimes retaining the ability to read numbers or musical notes even though their visual acuity was unchanged.<sup>63</sup> Drawing on Berlin’s work, Hinshelwood distinguished “dyslexia” from “alexia”—

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62. See James Hinshelwood, *A Case of Dyslexia: A Peculiar Form of Word-Blindness*, 148 THE LANCET 1451, 1452 (1896) (citing RUDOLF BERLIN, *EINE BESONDERE ART DER WORTBLINDHEIT (DYSLEXIA)* (1887)).

63. See James Hinshelwood, *Word-Blindness and Visual Memory*, 146 THE LANCET 1564 (1895).

the absolute inability to interpret written or printed language.<sup>64</sup> Both Hinshelwood and Berlin's patients were adults and their difficulties were described as having to do with "a disorder of the visual memory centre or of its connecting fibres."<sup>65</sup> In a few cases, it was thought that alcohol abuse worsened the disorder.<sup>66</sup> Because medical professionals did not know the reason for these reading problems, they initially were presumed to be a kind of visual impairment and were studied by ophthalmologists.

Hinshelwood and others soon began to observe this condition in children and coined the term "congenital word-blindness" to describe their condition. Dr. Pringle Morgan first described this condition in a child in 1896 and Hinshelwood offered a more detailed account of two other cases in children in 1900.<sup>67</sup>

In 1904, Hinshelwood provided an extended account of a twelve-year-old boy with congenital word-blindness. The boy was having great difficulty learning to read even though he was otherwise a very good student.<sup>68</sup> He was reading at "Standard II" whereas his classmates were reading at "Standard V." Hinshelwood recommended an intervention program for this boy that included individualized, "short and frequent lessons during the day without anything leading to exhaustion."<sup>69</sup> Thus, in 1904, we have the first recorded example of what we might today call an IEP for a child with a learning disability in reading. Hinshelwood reported that the boy progressed from Standard II to Standard IV in two years time under this intervention program.

Interestingly, seeds of the "discrepancy" approach can be found in the discussion of this boy. The teacher reported "there is another boy in his class who is quite as poor a reader, but this boy is all-round poor, showing no sign of smartness in anything."<sup>70</sup> Thus, it appears that only the boy with the apparently higher overall aptitude received individualized intervention.

In 1907, Hinshelwood's work began to focus directly on the discrepancy model in describing the children he studied. He distinguished

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64. *Id.*

65. Hinshelwood, *supra* note 62, at 1453.

66. *Id.* at 1454.

67. See James Hinshelwood, *Four Cases of Congenital Word-Blindness Occurring in the Same Family*, 2 BRITISH MED. J. 1229, 1230 (1907).

68. James Hinshelwood, *A Case of Congenital Word-Blindness*, 2 BRITISH MED. J. 1303 (1904).

69. *Id.* at 1304.

70. *Id.*

between those with “congenital word-blindness” who “as a rule, are bright and intelligent as other children” and those with a “general lack of intelligence and general failure of the mental powers”<sup>71</sup> He described those with congenital word-blindness as having a dysfunction in a “special cerebral area,”<sup>72</sup> because their vision was found to be normal. There is no indication that Hinshelwood ever studied those children with a “general lack of intelligence” who had difficulty learning to read.

It was not until the 1960s that clinical psychologists offered a definition of “learning disabilities.” Samuel Alexander Kirk suggested the first definition in 1962:<sup>73</sup>

A learning disability refers to a retardation, disorder, or delayed development in one or more of the processes of speech, language, reading, spelling, writing, or arithmetic resulting from a possible cerebral dysfunction and/or emotional or behavioral disturbances and not from mental retardation, sensory deprivation, or cultural and instructional factors<sup>74</sup>

This 1962 definition has many features that are part of the existing definition under federal law.<sup>75</sup> It seeks to distinguish between academic deficits that are a result of a neurological impairment rather than mental retardation or a lack of instruction. The 1962 definition describes the symptoms of the condition but does not suggest how to diagnose its existence.

The 1962 definition is also an “exclusionary” definition in that it determines who has a “learning disability” only after ruling out other explanations for the reading deficiencies. The reading deficiency is thought to result from a “cerebral dysfunction” because it is not the result of “mental retardation, sensory deprivation, or cultural and instructional factors.” At the time, there was no known method to directly verify the existence of the cerebral dysfunction.

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71. See Hinshelwood, *supra* note 67, at 1231.

72. *Id.*

73. SAMUEL A. KIRK, EDUCATING EXCEPTIONAL CHILDREN (1962).

74. *Id.* at 263.

75. See 20 U.S.C. § 1401(30)(A) (2006) (referring to the definition of a specific learning disorder in the IDEA as a “disorder in one or more of the basic psychological processes”); 20 U.S.C. § 1401(30)(C) referring to the exclusionary clause in the IDEA—the term “does not include a learning problem that is primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage”).

Barbara Bateman developed the concept of the discrepancy model to diagnose the existence of a learning disability in her 1965 definition:

[C]hildren who have learning disorders are those who manifest an educationally significant discrepancy between their estimated intellectual potential and actual level of performance related to basic disorders in the learning process, which may or may not be accompanied by demonstrable central nervous system dysfunction, and which are not secondary to generalized mental retardation, educational or cultural deprivation, severe emotional disturbance, or sensory loss.<sup>76</sup>

Her definition was similar to Kirk's in that she considered a learning disability to be the result of "central nervous system dysfunction" rather than "generalized mental retardation, educational or cultural deprivation, severe emotional disturbance, or sensory loss." But she added the concept of a discrepancy between intellectual potential and actual performance as a diagnostic tool.<sup>77</sup> Bateman's emphasis on the existence of a discrepancy between "intellectual potential" (or what we might call "aptitude") and "actual level of performance" (or what we might call "achievement") is the historical basis for the discrepancy model.<sup>78</sup>

In 1968, the National Advisory Committee on Handicapped Children ("NACHC"), under Kirk's leadership, offered a definition of learning disability quite similar to Kirk's 1962 definition. The key difference was the addition of the word "specific" to the term so that it became "specific learning disability."<sup>79</sup> The purpose of the addition of the adjective "specific" was to emphasize that "the learning failure was not a generalized problem like [intellectual disability] but rather one predicated on

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76. Barbara Bateman, *An Educational View of a Diagnostic Approach to Learning Disorders* in 1 LEARNING DISORDERS 219, 220 (J. Hellmuth ed., 1965).

77. *Id.*

78. See, e.g., AM. PSYCHIATRIC ASS'N, DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS 44 (3rd ed. rev. 1987) (using the discrepancy model to define "specific learning disabilities"); Corrine E. Kass & Helmer R. Myklebust, *Learning Disabilities: An Educational Definition*, 2 J. LEARNING DISABILITIES 377, 378-79 (1969) (discussing the U.S. government sponsored organizations endorsement of the use of the discrepancy model to diagnose learning disabilities).

79. SAMUEL A. KIRK, SPECIAL EDUCATION FOR HANDICAPPED CHILDREN, FIRST ANNUAL REPORT OF THE NATIONAL ADVISORY COMMITTEE ON HANDICAPPED CHILDREN 34 (1968) [hereinafter NACHC].



the possession of only a discrete number of deficits.”<sup>80</sup> The NACHC definition also provided a list of conditions that could cause this disorder: “perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia, etc.”<sup>81</sup> It provided these examples instead of referring to “central nervous system dysfunction.” As Kenneth Kavale, a critic of this approach, observed: “[I]n other words, the simile becomes the metaphor.”<sup>82</sup> It is not particularly helpful to say that dyslexia is caused by dyslexia.

The addition of the term “specific” was supposed to add some refinement to the example provided above for use of the discrepancy model. Students with learning disabilities were considered not to have low achievement in every academic subject. Instead, they were considered to have low achievement in one area, such as reading.<sup>83</sup> As the above definition suggests, the child only has a “discrete” number of deficits (maybe reading and writing but not math). If the problem is more generalized, then this definition suggests that other hypotheses, such as intellectual disability, should be considered.

It is not until the 1970s that researchers tried to determine whether there are meaningful differences between those with a “general lack of intelligence” who struggle with reading and those who struggle with reading even though they are “bright and intelligent.” Michael Rutter and William Yule tested these two groups in the 1970s as part of a study of 2300 children who lived on the Isle of Wight and were between the ages of 9 and 11.<sup>84</sup> By administering a shortened version of the Wechsler Intelligence Scale for Children (1949) and the Neale Analysis of Reading Ability (1958), they isolated two groups of children: those with “specific reading retardation” and those with “general reading backwardness.” The eighty-six children in the “specific reading retardation” group were reading at a level at least two years, four months below what

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80. Kenneth A. Kavale & Steven R. Forness, *What Definitions of Learning Disability Say and Don't Say: A Critical Analysis*, 33 J. LEARNING DISABILITIES 239, 242 (2000).

81. NACHC, *supra* note 79, at 34.

82. Kenneth A. Kavale et al., *A Time to Define: Making the Specific Learning Disability Definition Prescribe Specific Learning Disability*, 32 LEARNING DISABILITY Q. 39, 41 (2009) (citing J. David Smith & Edward A. Polloway, *Learning Disabilities: Individual Needs or Categorical Concerns?*, 12 J. LEARNING DISABILITIES 525, 528 (1979)).

83. More recent studies, however, have found that children with a learning disability in reading often receive low academic scores in other subject areas as well, possibly because of the importance of reading to the entire curriculum. See *infra* text accompanying notes 129-134.

84. Michael Rutter & William Yule, *The Concept of Specific Reading Retardation*, 16 J. CHILD PSYCHOL. & PSYCHIATRY 181 (1975).

one would expect for their chronological age *and* their IQ. The seventy-nine children in the "general reading backwardness" category also read at a level at least two years, four months below what one would expect for their chronological age but their reading achievement was *not* lower than one would expect based on their IQ.<sup>85</sup> The average IQ in the "general reading backwardness" group was 80 and the average IQ in the "specific reading retardation" group was 102.5. The question they asked was: are there "meaningful differences between the two varieties of reading disability?"<sup>86</sup>

They reported four kinds of differences between these two groups. First, they found that boys were overrepresented in the specific reading retardation group. Boys constituted 76.7 percent of the specific reading retardation group. Second, they found that members of the general reading backwardness group were more likely to have a neurological disorder such as cerebral palsy, as well as a wide range of motor and praxic abnormalities. Third, they found that both groups of weak readers were likely to have speech/language abnormalities and have a family history of reading difficulties at a rate higher than found in a control group.<sup>87</sup> They also found that children in both groups of weak readers tended to come from larger families than a control group. Fourth, they found that the general reading backwardness group tended to come from families of lower social status as compared to the control group, but that the specific reading retardation group did not.<sup>88</sup> In other words, the poor readers with higher IQ's tended to come from middle-class families; the poor readers with lower IQ's tended to come from poor families.

Having determined that the reading backward and specific reading retardation groups differed in some ways, they then asked the question whether these differences "have any educational implications."<sup>89</sup> In order to answer that question, they retested the children when they were fourteen on the same reading ability test as well as a spelling test and an arithmetic-math test. (They do not report whether any of these children received any kind of special intervention so one has to assume they received similar educations.) The following chart summarizes their follow-up work:

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85. *Id.* at 186.

86. *Id.*

87. *Id.* at 186-89.

88. *Id.* at 190.

89. *Id.*

**Table 3: Comparing Educational Progress of Reading Backward Group and Specific Reading Retardation Group at Age 14<sup>90</sup>**

	Reading Ability	Spelling	Math-Arithmetic
Reading Backward Group (low IQ)	9 years 4 months	8 years 6 months	15.5 raw score (below grade level)
Specific Reading Retardation Group (average IQ)	8 years 10 months	7 years 10 months	19 raw score (below grade level)

They found that the educational prognosis in reading and spelling was worse for the group with the higher aptitude although both groups continued to struggle with reading and spelling during the time period of this study, and were well below the expectations for 14 year old children. This trend was different for math-arithmetic. The group with the higher IQ performed better in math-arithmetic than the group with a below average IQ. The math scores are on a different scale than the reading and spelling scores, so they cannot be reported in terms of the size of the difference from the control group, but the authors report that the math scores were also below grade level for both the reading backward and specific reading retardation groups.<sup>91</sup> Although not a point of emphasis in their work, their findings support the observation that poor reading skills can negatively impact a child across the entire curriculum.

Based on these findings, the authors then asked: “Do the two groups need different types of remedial help with their reading?”<sup>92</sup> At this point in their article, they connect their work to the emerging work in the field of dyslexia and ask whether the students with specific reading retardation also have dyslexia.

To answer that question, they quote the prevailing definition of dyslexia by the World Federation of Neurology:

[A] disorder manifested by difficulty in learning to read despite conventional instruction, adequate intelligence and socio-cultural opportunity. It is dependent upon fundamental cognitive disabilities which are frequently of constitutional origin.<sup>93</sup>

90. *Id.* at 191.

91. *Id.* at 190.

92. *Id.* at 190-91.

93. *Id.* at 191.

Interestingly, Rutter and Yule disavow having their work considered as part of the emerging discussion of dyslexia. As we will see, their own work, however, suffers from some of the problems they identify with the prevailing definition of dyslexia. Moreover, their work was used in ways that are inconsistent with this aspect of their critique. Nonetheless, they did not reconsider some of their conclusions when their work was criticized as suffering from some of these problems. It is also the case, however, that some aspects of their critique were prescient in foreshadowing problems that would emerge with the definition of learning disabilities under federal law.

Rutter and Yule offer three critiques to the first half of the World Federation of Neurology's definition. First, they ask what is meant by conventional instruction and whether this definition excludes the possibility that children taught through alternative methods can be diagnosed as dyslexic.<sup>94</sup> This critique foreshadows difficulties that emerge with RTI, because this model insists that children struggle in school through conventional instruction before being diagnosed as having a learning disability and offered special instruction.<sup>95</sup> Rutter and Yule suggest we should have a mechanism to diagnose a child with dyslexia even if the child is already receiving special education.

Second, they ask what is meant by "adequate intelligence" and note that reading has been taught to children with IQs of 50.<sup>96</sup> This observation is part of what has become the critique of the discrepancy model because that model presumes that reading should only be expected to be at grade level if a child also has at least an average IQ.<sup>97</sup> The notion of what level of reading should be "expected" is a fundamental assumption under the discrepancy model that they do not accept.

Third, they ask whether the reference to "socio-cultural" opportunity is meant to exclude children from a "deprived background" from being dyslexic.<sup>98</sup> This observation also foreshadows the critique of the discrepancy model as disproportionately identifying children from higher socio-economic backgrounds.<sup>99</sup> Ironically, a difference in socio-econom-

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94. Rutter and Yule, *supra* note 84.

95. See 34 C.F.R. § 300.308 (2013).

96. Rutter and Yule, *supra* note 84.

97. See *infra* notes 113-16.

98. Rutter and Yule, *supra* note 84, at 192.

99. *Id.*

ic status between the two groups of slow readers was part of their own work yet not one that they critically discussed.

In sum, they characterize the first half of the definition as reflecting a “council of despair” because it merely classifies someone as dyslexic when all the other known causes of reading disability can be ruled out.<sup>100</sup> The first half of the definition does not help us directly measure the existence of dyslexia.

Turning to the second half of the definition, they accepted one premise but rejected another. They turned to the requirement that “fundamental cognitive disabilities” be present. They reviewed the literature on precisely which cognitive disabilities have been found present in dyslexic students and which have been found present in those with specific reading retardation. They conclude that both groups have been found to have various cognitive disabilities but their characteristics differ.<sup>101</sup> Then, they turned to the requirement that the deficits found in dyslexic readers are “frequently of constitutional origin.” They surveyed the evidence suggesting that dyslexia is inherited in origin and disputed the accuracy of that evidence suggesting that it merely “confirmed the prejudices of the investigator and completely failed to add to that knowledge.”<sup>102</sup> Thus, they rejected the genetic component of the definition of dyslexia for specific reading retardation.

Their rejection of the emphasis on genetic arguments under the prevailing definition of dyslexia caused them to reject the appropriateness of placing specific reading retardation within that category. They argue that dyslexia and specific reading retardation are different because dyslexia is based on a “unitary condition” and specific reading retardation is based on a “multi-factorial view.”<sup>103</sup> At this point, their critique of dyslexia is quite harsh: “In short, there has been a complete failure to show that the signs of dyslexia constitute any meaningful pattern.”<sup>104</sup> They therefore conclude: “This would suggest that if there is a single genetic syndrome of dyslexia (which has yet to be shown) it must account for only a minority of cases of specific reading retardation.”<sup>105</sup>

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100. *Id.*

101. *Id.*

102. *Id.* at 193.

103. *Id.*

104. *Id.* at 194.

105. *Id.*

Although Rutter and Yule insist that it is not appropriate to classify all the children with specific reading retardation as having dyslexia, they do suggest that their findings about the differences between backward and retarded readers may mean that "all those concerned with children's reading skills will have to pay closer attention to the differentiation between general reading backwardness and specific reading retardation."<sup>106</sup> In saying we should pay "closer attention" to the differentiation, they did not mean that we should ignore the backward readers as we develop appropriate intervention strategies. Their observation that children with low IQ's can be taught to read suggests they would want resources to be used to target both groups. The "closer attention" phrase, however, became foundational to the view that the special education laws should *only* target the "reading retarded" for extra intervention.<sup>107</sup> Further research, as we will see, disputes the validity of the Rutter and Yule findings that the prognosis for children who are reading retarded is worse than the prognosis for children who are backward readers.

### III. MODERN DEFINITION OF LEARNING DISABILITY

At about the same time as Rutter and Yule were publishing their research, the United States Congress enacted the Education for All Handicapped Children Act in 1975 (the precursor to the IDEA). This statute listed about a dozen classifications that school districts could use to classify a child as "disabled" and receive some special education funding. One classification was what was called a "specific learning disability" in reading. It was defined as: "a disorder in 1 or more of the basic psychological processes involved in understanding or in using language, written or spoken, which disorder may manifest itself in the imperfect ability to . . . read."<sup>108</sup> The statute then goes on to say that the term "specific learning disability" "does not include a learning problem that is primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage."<sup>109</sup>

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106. *Id.* at 195.

107. Stanovich, *supra* note 7, at 388

108. 20 U.S.C. § 1401(30)(A) (2006).

109. 20 U.S.C. § 1401(30)(C).

Concerned that the definition of learning disability was too nebulous and resources for children with that classification would overwhelm the funding provided by the statute, Congress insisted that the number of children classified as learning disabled be limited to one-sixth of all the children classified as disabled within a state until the Office of Education at the United States Department of Health, Education and Welfare devised a definition for that category.<sup>110</sup> In 1977, the Office of Education responded with a regulation implementing the discrepancy model, thereby lifting the funding cap. The regulation stated that a school district team could determine that a child has a specific learning disability if “the team finds that a child has a severe discrepancy between achievement and intellectual ability in . . . reading comprehension.”<sup>111</sup> The discrepancy model was the only model accepted for the determination of a learning disability. As the Office of Education explained: “If there is no severe discrepancy between how much should have been learned and what has been learned, there would not be a disability in learning.”<sup>112</sup> In other words, Rutter and Yule’s “reading backward” group would not qualify as having a learning disability in reading; only the “specific reading retardation” group would qualify.

The 1977 rules do not require a direct measure of a disorder in a psychological process in order for a child to be classified as having a learning disability. Instead, that deficit is inferred if there is a discrepancy between aptitude and achievement and other factors can be ruled out as causing the discrepancy. The Office of Education’s definition of “learning disability” was essentially Rutter and Yule’s definition of “reading retarded” even though Rutter and Yule had not concluded that only the “reading retarded” group was entitled to special assistance.

Meanwhile, researchers sought to replicate Rutter and Yule’s findings, asking two important questions: (1) is the prognosis for the “reading retarded” and the “reading backward” group actually different and (2) do these two groups need different remedial interventions to improve their reading? The validity of their findings was questioned by others.

In 1989, Linda Siegel offered a strong critique of Rutter and Yule’s findings.<sup>113</sup> First, she argued that the Rutter and Yule study used an apti-

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110. 121 CONG. REC. 25,531 (daily ed. July 29, 1975).

111. 42 Fed. Reg. 65083 (Dec. 29, 1977).

112. *Id.*

113. Linda S. Siegel, *IQ Is Irrelevant to the Definition of Learning Disabilities*, 22 J. LEARNING DISABILITIES 469 (1989).

tude test that was likely to understate the aptitude of a child with a learning disability for two reasons. The aptitude and achievement tests used by Rutter and Yule were not measuring independent variables.<sup>114</sup> The verbal scale on the aptitude test has many components that are affected by vocabulary growth yet studies have “shown that poor readers are exposed to significantly less text than good readers, so that opportunities for vocabulary growth are more limited for poor readers.”<sup>115</sup> The aptitude test is actually measuring, in part, skills developed through reading. In addition, the aptitude test placed a premium on speed. Studies have shown that learning disabled children can solve as many problems as non-learning-disabled children but only if provided an adequate amount of time.<sup>116</sup> Both of those factors caused the aptitude test administered by Rutter and Yule to underestimate the aptitude of a child with a learning disability. Hence, many of the slow readers who Rutter and Yule concluded did not have a discrepancy between aptitude and achievement may have had a discrepancy if they have been administered truly independent aptitude and achievement tests.

Second, she noted that researchers have not been able to replicate Rutter and Yule’s conclusion that the academic prognosis of the reading backward and specific reading retardation groups is different.<sup>117</sup> One difficulty with trying to replicate their work is that there is no agreement among education psychologists as to which IQ tests to administer or how much of a discrepancy is needed to conclude the discrepancy is “severe.”<sup>118</sup> Because aptitude and achievement are not independent variables, “the particular IQ test used can make quite a difference in who is defined as reading disabled.”<sup>119</sup> Thus, their seemingly objective study was too subjective to be replicated by others.

Third, she contested the assumption that we should expect reading performance to be predicted from IQ scores. Because a significant number of children with low IQs do learn to become good readers, she argued that “children with low IQ scores who fail to read are genuinely reading disabled and do not fail to read because of low IQ scores.”<sup>120</sup> Siegel argued that all children should be classified as “learning disabled

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114. See *supra* text accompanying notes 84-85.

115. Siegel, *supra* note 113, at 469.

116. *Id.* at 470.

117. *Id.* at 471.

118. *Id.* at 472.

119. *Id.*

120. *Id.*



in reading” if they struggle to learn to read irrespective of their aptitude. In other words, even if aptitude and achievement are independent variables, she disputed that IQ can be expected to predict reading proficiency.

In support of her argument that all children who are poor readers should be classified as learning disabled in reading, Siegel investigated the reading skills of children who she classified as reading disabled but who had a range of aptitude scores. She did not use the discrepancy definition to determine who was reading disabled; she classified any student as reading disabled if his or her score on the Reading Test of the Wide Range Achievement Test (WRAT) was less than or equal to the 25th percentile.<sup>121</sup> She then tested the reading disabled students (and a control group of nondisabled readers) on various tests of skills: reading of pseudowords, reading a list of thirty-six regular and exception words, performing reading tasks that required knowledge of orthographic and phonological aspects of English, spelling tasks, understanding of syntax, and reading comprehension. She found that the reading disabled students scored much worse than the control group on these tests involving the basic processes of reading. Based on the results from these comparisons, she argued “that there is really no need to differentiate poor readers on the basis of IQ if one is studying basic processes that are involved in reading.”<sup>122</sup> She concluded that the discrepancy definition understates who should be defined as having a reading disability.<sup>123</sup>

Siegel recommended that the discrepancy model, with its focus on IQ, be replaced with “tests of achievement that might give a better idea of the child’s actual functioning . . . . Remediation based on a detailed knowledge of the child’s academic skills makes more sense than some extrapolation of what reading . . . should be, based on some imprecise IQ measure and an illogical discrepancy definition.”<sup>124</sup> Siegel was one of the first researchers to argue for the development of diagnostic instruments that could directly measure a child’s functioning to determine if the child had a learning disability in reading.

Aware of the critique of their work by Siegel and others, Rutter wrote an article revisiting his work in 1989, twenty-five years later. He reported that subsequent studies suggest that IQ-discrepant students are dis-

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121. *Id.* at 473.

122. *Id.* at 475.

123. *Id.*

124. *Id.* at 477.

tinctive from IQ-consistent students with reading difficulties in having "a very marked male preponderance, in being less likely to be accompanied by general neurodevelopmental impairment, and in being particularly associated with speech and language disabilities."<sup>125</sup> Nonetheless, Rutter qualified his work in 1989 by noting: "it remains uncertain whether the reading processes per se in [IQ-discrepant group] differ from those in [IQ-consistent group]."<sup>126</sup> Rutter's qualification of his own work had no effect on federal education policy at the time.

Studies conducted after 1989 have further questioned the validity of Rutter and Yule's work.<sup>127</sup> In 1992, Bennett Shaywitz and other researchers published a study that compared reading achievement in students who were learning disabled under the discrepancy model and those who had low reading achievement scores but did not meet the discrepancy definition for learning disability.<sup>128</sup> They assessed these children in kindergarten (retrospectively), second and fifth grade to mark their progress over time. They also compared these children to a control group that was not behind in reading. These children's reading achievement scores were based on their score on the Woodcock-Johnson Reading Cluster test. (The researchers do not report whether any of these children received intervention services.)

In second grade, the control group had a mean reading score of 114 whereas the discrepancy group had a mean score of 82 and the poor readers (without a discrepancy) had a mean score of 85. In fifth grade, the control group had a mean reading score of 111, the discrepancy group had a mean score of 90 and the poor readers had a mean score of 87.<sup>129</sup> The discrepancy group made somewhat more improvement than the poor reader group (which is the opposite of the findings of Rutter and Yule) but the authors explain that result as simply a result of the phenomenon of regression toward the mean.<sup>130</sup> Both groups were far below their peers in

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125. Michael Rutter, *Isle of Wight Revisited: Twenty-five Years of Child Psychiatric Epidemiology*, 29 J. AM. ACAD. CHILD & ADOLESCENT PSYCHIATRY 633, 637 (1989).

126. *Id.* at 637.

127. See also Jack M. Fletcher et al., *Cognitive Profiles of Reading Disability: Comparisons of Discrepancy and Low Achievement Definitions*, 86 J. EDUC. PSYCHOL. 6, 18-19 (1994) (concluding that there was only limited support in the research findings "for the validity of the classic Rutter and Yule (1975) classification of specific reading retardation versus general reading backwardness").

128. Bennett A. Shaywitz et al., *Discrepancy Compared to Low Achievement Definitions of Reading Disability: Results from the Connecticut Longitudinal Study*, 25 J. LEARNING DISABILITIES 639 (1992).

129. *Id.* at 642 (Table 1).

130. *Id.* at 646.

**Table 4. Second and Fifth Grade Reading Scores for Poor Readers**

	Control	DO (Discrepancy Definition & high IQs)	DO (Discrepancy Definition & average IQs)	L (Poor readers but did not meet Discrepancy definition)
Second Grade Reading/Full Scale IQ	114/119	92/123	79/103	85/95
Fifth Grade Reading/Full Scale IQ	111/123	96/123	89/106	87/97

fifth grade. However, the results became even more interesting when they were broken into three groups: students who met the discrepancy definition and had above-average IQs (DO group), students who met the discrepancy definition (D group) and had average IQs, and students who were poor readers (but did not meet the discrepancy definition) (L group). The above chart shows their reading achievement over time.

The control group and the DO Group both had IQs of 123 in fifth grade but the DO group had reading scores one standard deviation lower than that of the control group and nearly two standard deviations below what one would expect based on their IQ. Their rate of improvement was worse than the D group and about the same as the L group. Nonetheless, by fifth grade, the DO group had reading scores close to those of the average for the population whereas the D and L groups had scores nearly one standard deviation below the norms for the population. Were a school district merely to target intervention on those children who scored at least one standard deviation below the mean in reading achievement in second grade, the DO group would not receive intervention. Shaywitz and his colleagues conclude from their study that the high aptitude group also requires intervention because their reading scores stay well below what one would expect in fifth grade.<sup>131</sup> They state: “the

131. *Id.* at 646 (“Given the similarities between D and L, one might agree with the position taken by Siegel (1988, 1989) and Fletcher et al. (1989) that reading disability should be defined on the basis of poor reading alone. However, such an approach would ignore the significant number of children with high IQ and achievement scores above 90 in Figure 1 (DO, representing about 25% of the discrepancy-based children in this study) . . . . Thus, despite higher IQ, the pattern of performance of children with DO suggests an impairment similar to that of children meeting low achievement criteria.”).

most reasonable approach to determining eligibility for special education services may be to consider both groups of children with reading disability, D and L, as eligible for special education services.”<sup>132</sup>

Shaywitz’s study does not merely report students’ overall reading scores but also reports their scores on specific components of the reading test such as “word identification” or “word attack.” These subscores allowed them to understand the precise reading problems experienced by students in their study. These data led them to conclude: “phonological processing are not unique to dyslexia but, rather, are also found in children with ‘garden-variety’ poor reading (corresponding to our L group).”<sup>133</sup> But it would be misleading to conclude from their work that IQ is irrelevant to intervention for children who are poor readers. They postulated that the D and L groups might need different approaches because the deficits for the L group “are not as modular” as those of the D group, i.e., only linked to phonological processing problems.<sup>134</sup>

Thus, by 1994, there was little support for the discrepancy approach among research scientists as the exclusive means of identifying learning disabilities. Nonetheless, researchers were not coming to a consensus as to the correct alternative approach. Linda Siegel turned the discrepancy model on its head by insisting that it is *not* appropriate to call children reading disabled who have high IQs and average or slightly above average reading levels.<sup>135</sup> By contrast, Shaywitz favored intervention for all slow readers as well as readers who had high IQs and were merely average readers.<sup>136</sup> Shaywitz also thought that IQ should play a role in devising appropriate remedial strategies.<sup>137</sup> Both Siegel and Shaywitz, however, did emphasize the role that good diagnostic instruments could play in determining which students were struggling with basic components of the reading process.

Federal educational policy, however, did not reflect this emerging research. The discrepancy approach was the exclusive approach for

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132. *Id.* at 646.

133. *Id.* at 647.

134. *Id.*

135. Siegel, *supra* note 113, at 472 (concluding that “these children with high IQ scores and average reading scores may be quite good readers and not require remediation in the same sense as children with severe reading disabilities who have very low scores on reading tests”).

136. Shaywitz, *supra* note 128, at 646.

137. *Id.* at 647.

determining whether a child had a learning disability in reading under federal law until 2004.

#### IV. REVISED DEFINITION OF LEARNING DISABILITY UNDER SPECIAL EDUCATION LAWS

##### A. President's Commission on Excellence in Special Education

In light of the growing critique of the discrepancy model as the sole way to determine who is learning disabled, the federal government decided to revisit the discrepancy model. On October 2, 2001, President George W. Bush created the President's Commission on Excellence in Special Education through Executive Order 13227 and charged it to prepare a report by July 1, 2002. Meanwhile, President Bush signed "No Child Left Behind"<sup>138</sup> into law on January 8, 2002 ("NCLB"). NCLB was passed on a bipartisan basis.<sup>139</sup>

In a ninety-six-page report, the Commission devoted about two pages to the identification as children as being learning disabled.<sup>140</sup> These two pages are the foundation for the transformation from the discrepancy model to the RTI model. Thus, it is important to closely examine their rationale and assess how RTI responds to these problems. Some of the key ideas in this report are: (1) IQ testing is a waste of money, (2) IQ testing is not useful in determining who should receive assistance as learning disabled, (3) a move away from the discrepancy model should result in earlier, not later, intervention, and (4) a model that replaces the discrepancy model should be less rather than more subjective.

Their primary argument is a "lack of consistency" in the learning disability diagnostic criteria. They claim this lack of consistency "makes it possible to diagnose almost any low- or under-achieving child as SLD

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138. No Child Left Behind Act of 2001, Pub. L. No. 107-110, 115 Stat. 1425 (2002) (codified as amended in scattered sections of 20 U.S.C.).

139. NCLB passed the House on May 23, 2001 by a vote of 384-45 and passed the Senate on June 14, 2001 by a vote of 91-8. See *Final Vote Results for Roll Call 145*, OFFICE OF THE CLERK, HOUSE OF REPRESENTATIVES, <http://clerk.house.gov/evs/2001/roll145.xml> (last visited July 27, 2013); *U.S. Senate Roll Call Votes 107<sup>th</sup> Congress – 1st Session*, U.S. SENATE, [http://www.senate.gov/legislative/LIS/roll\\_call\\_lists/roll\\_call\\_vote\\_cfm.cfm?congress=107&session=1&vote=00192](http://www.senate.gov/legislative/LIS/roll_call_lists/roll_call_vote_cfm.cfm?congress=107&session=1&vote=00192) (last visited July 27, 2013).

140. PRESIDENT'S COMMISSION ON EXCELLENCE IN SPECIAL EDUCATION, *A NEW ERA: REVITALIZING SPECIAL EDUCATION FOR CHILDREN AND THEIR FAMILIES*, 24-25 (2002) [hereinafter PRESIDENT'S COMMISSION].

[specific learning disability] depending on resources and local considerations.”<sup>141</sup> Citing a study by Karla Stuebing and various co-authors, the Report says: “the IQ discrepancy model provides an arbitrary subdivision of the reading-IQ distribution that is fraught with statistical and other interpretative problems.”<sup>142</sup>

The Commission recommended that IQ testing be eliminated from the identification process. It cited cost and “the lack of evidence indicating that IQ test results are related meaningfully to intervention outcomes.”<sup>143</sup> It criticized the discrepancy model as a “wait to fail” model because few children receive assistance prior to third grade. It characterized the discrepancy model as highly subjective and recommended that there “should be a careful evaluation of the child’s response to instruction” such as “what methods have been used to facilitate the child’s learning and adaptation to the general education classroom.”<sup>144</sup> “Response to intervention” was defined as an evaluation of “performance measures, such as pre- and post-administration of norm referenced tests and progress monitoring.”<sup>145</sup> To prevent the wrong children from being served, the Commission recommended: “that current regulations be modified so that the student’s response to scientifically based instruction is part of the criteria for diagnosing the existence of SLD.”<sup>146</sup>

There are many problems with the Commission’s brief analysis. RTI will not save school districts money by avoiding the need to conduct unnecessary IQ testing. IQ testing will still typically be needed to determine if a child has an intellectual disability. Federal law requires school districts to conclude that a child who is classified as learning disabled does not have educational deficits due to “mental retardation.”<sup>147</sup> Unless that rule is eliminated then school districts will often find it necessary to administer an IQ test in order to rule out an intellectual disability as the explanation for the academic deficit. Moreover, cognitive testing is still likely to be necessary to tailor an appropriate IEP for a child even if it is not needed to determine whether to classify the child as learning disabled.<sup>148</sup>

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141. *Id.* at 25.

142. *Id.*

143. *Id.*

144. *Id.* at 25-26.

145. *Id.* at 26.

146. *Id.*

147. 20 U.S.C. § 1401(30)(C) (2006).

148. See Virginia W. Berninger, *Research-Supported Ideas for Implementing Reauthorized IDEA with Intelligent Professional Psychological Services*, 43 PSYCHOL. SCHS. 781 (2006).

The President's Commission also misinterpreted the Stuebing study.<sup>149</sup> Stuebing and her colleagues sought to reach children as young as possible with effective intervention. Many schools do not try to assess for discrepancies before Grade 2 because of the difficulty attaining accurate results under the discrepancy model for that age group.<sup>150</sup> Stuebing and her colleagues argued that this delay in identification causes the discrepancy model to do "more harm than good because of the evidence supporting the greater efficacy of early intervention in kindergarten to Grade 2 relative to remedial services provided in Grade 3 and beyond."<sup>151</sup> They did not argue that Child A in Table 1 (who already had a discrepancy by second grade) should *not* be classified as disabled. They simply argued that we should have a way to classify the other children in Table 1 as potentially disabled. The "more harm than good" statement was a statement about delayed identification rather than a statement about overidentification.

Further, the Commission Report, relying on the Stuebing study, emphasized the subjectivity of the discrepancy model, saying that it was fraught with "statistical and other interpretative problems."<sup>152</sup> Again, the Report seems to misunderstand the statistical problems described by the Stuebing study. Stuebing and her colleagues were concerned that the discrepancy method of learning disability identification missed low achievers who did not have an IQ discrepancy, and resulted in delayed identification. They did not suggest that the discrepancy model was hard to apply objectively or an inappropriate model. In fact, they said: "That the presence of IQ-discrepancy is a valid indicator of LD [learning disability] in some children is not under dispute in this article."<sup>153</sup> Unfortunately, as we will see,<sup>154</sup> the RTI model is fraught with statistical and other interpretative problems—in that way, it is as problematic as the discrepancy model.

Finally, the Commission's Report missed the most important recommendation from the Stuebing study in its rush to embrace the nebulous concept of RTI. Stuebing and her colleagues suggested that the definition of learning disability should move to an *inclusionary* model rather than an *exclusionary* model that defines what a learning disability is

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149. Karla Stuebing et al., *Validity of IQ-Discrepancy Classifications of Reading Disabilities: A Meta-Analysis*, 39 AM. EDUC. RES. J. 469, 509-510 (2002).

150. *Id.* at 509.

151. *Id.*

152. PRESIDENT'S COMMISSION, *supra* note 140, at 25.

153. Stuebing et al., *supra* note 149, at 472.

154. See *infra* Part IV.C.

rather than what it *is not*. Some examples of an inclusionary approach would include measurements of the following:

- components of the reading process, such as word recognition, fluency and comprehension;
- components of word recognition difficulties, such as phonological awareness, rapid naming, phonological (working) memory, and vocabulary.<sup>155</sup>

At the end of a paragraph describing such an inclusionary approach, they said: “there is a strong need to incorporate response to intervention as a component of identification.”<sup>156</sup> They did not suggest replacing the discrepancy model with the RTI model. Neither model is a diagnostic tool designed to capture the source of a child’s difficulties with reading. In fact, RTI is another exclusionary (rather than inclusionary) tool; it simply confirms that poor classroom instruction is *not* the reason for the educational deficit. But it does not tell us what *is* the reason for the educational deficit.

## B. RTI Proponents

Various educational psychologists have written articles in support of RTI as a way to determine which students should be classified as learning disabled. Their description of RTI, however, is *not* the program implemented by the federal government under the IDEA. Their focus on individualized attention, as we will see below, is essentially an IEP for all children who are delayed in reading. While that kind of individualized attention might be good educational practice, it is not what Congress intended when it implemented RTI to save school districts money under the IDEA.

David Barnett and his colleagues provide an example of a single-case design of increasing intensity to show how RTI can work effectively.<sup>157</sup> They provide an example of a student, Abby, who reads approximately 53% below the average rate of five randomly selected second-grade

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155. Stuebing et al., *supra* note 149, at 510.

156. *Id.*

157. David W. Barnett et al., *Response to Intervention: Empirically Based Special Service Decisions from Single-Case Designs of Increasing and Decreasing Intensity*, 38 J. SPECIAL EDUC. 66 (2004).



peers.<sup>158</sup> Her intervention period is about fifty-four days in length and consists of five phases. At the end of this time period, the team determines that Abby meets the criteria for special education and related services “because grade-level learning rates were approximated only in response to a uniquely designed and specialized intervention.”<sup>159</sup>

In theory, this program seems excellent. Within fifty-four days, the school district was able to identify an intervention program that produced good results for Abby. She was also able to try a more integrated approach before turning to a specialized approach without many months of delays. But this program also required considerable resources including data collection time for the classroom teacher and the assumption that it was feasible to collect reliable data during the intervention period. As Barnett and his colleagues noted, cost can be a problem in designing an effective intervention program.<sup>160</sup> There can also be challenges in developing an effective design related to “poor selection of significant variables for change, week initial interventions, or low intervention adherence [which] can lead to false conclusions about necessary intervention intensity.”<sup>161</sup> Barnett and his colleague’s single example is relatively straightforward because the school district kept testing exactly one skill—correct words per minute. When a child’s reading problems, however, have several aspects, such a simple design may not be feasible. In response to that problem, Barnett and his colleagues say: “Although children’s concerns may be multi-faceted, teams often target one or a few response classes directly related to general educational programming in order to clarify the intervention targets and services that a team deems necessary for the child to participate in general education.”<sup>162</sup> In other words, they do not have an effective RTI suggestion for children with multi-faceted problems. Their approach works in a resource-intensive environment where data can be collected and analyzed over a two-month interval. Some argue that it is unrealistic to expect school psychologists to have the time and training to implement this kind of model on a large scale.<sup>163</sup>

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158. *Id.* at 73.

159. *Id.* at 74.

160. *Id.* at 75.

161. *Id.* at 76.

162. *Id.* at 77.

163. See Berninger, *supra* note 148, at 791 (arguing that RTI transforms school psychologists into “problem-solving consultants for academic problems”).

Barnett and his colleague's research design is also a small scale, case study. As Stanley Pogrow has argued,

[w]hile small-scale success is inspirational, the methods are not necessarily workable on a large scale. The fact that something works in a few classrooms, in a few schools, with a few teachers, at a few grade levels, for a few weeks, and so on says nothing about whether or how it can be disseminated or will actually work on a large scale.<sup>164</sup>

A single-case study design, such as Barnett's, faces this criticism.

Jack Fletcher and Sharon Vaughn are supporters of RTI but they also recognize that RTI, if implemented effectively, requires more resources than is realistic in most school districts.<sup>165</sup> In their description of RTI, all children are assessed frequently (every 1-4 weeks) during tier one. Further, "[c]lassroom teachers receive professional development in effective instruction and ways to enhance differentiation and intensity through flexible grouping strategies and evaluations of progress."<sup>166</sup> Based on local or national benchmarks, about 25% of students would become eligible for tier two where students would "receive additional instruction in small groups of three to five students for 20-40 min[utes] daily."<sup>167</sup> Tier two intervention would be continuous. Students who still do not make adequate progress would be referred to tier three intervention where intervention would provide "smaller groups, increased time in intervention (45-60 min[utes] daily), and a more specialized teacher."<sup>168</sup> As they acknowledge, "many school districts do not perceive that they have the personnel and resources to effectively implement all the elements of RTI models."<sup>169</sup> Nonetheless, they support RTI as a potentially effective model.<sup>170</sup>

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164. Stanley Pogrow, *Reforming the Wannabe Reformers: Why Education Reforms Almost Always End Up Making Things Worse*, 77 PHI DELTA KAPPAN 656, 659 (1996).

165. See Jack M. Fletcher & Sharon Vaughn, *Response to Intervention: Preventing and Remediating Academic Difficulties*, 3 CHILD DEVELOPMENT PERSPECTIVES 30 (2009).

166. *Id.* at 31.

167. *Id.*

168. *Id.*

169. *Id.* at 32.

170. Similarly, others who favor an RTI approach describe a model that is extremely resource-intensive and bears little description to the cost-saving approach described by the President's Commission. See, e.g., Frank R. Vellutino et al., *Response to Intervention as a Vehicle for Distinguishing Between Children With and Without Reading Disabilities: Evidence for the Role of Kindergarten and First-Grade Interventions*, 39 J. LEARNING DISABILITIES 157 (2006).

### C. RTI Opponents

Fletcher and Vaughn's defense of RTI was followed by a heated critique by Cecil Reynolds and Sally Shaywitz. In the same volume as Fletcher and Vaughn's article, they produced a brief reply in which they criticize the Fletcher and Vaughn literature review, saying that it is "a selective review of empirical support for RTI and a consequently overly optimistic view of many practical issues surrounding the implementation of RTI models."<sup>171</sup>

In a separate article, Reynolds and Shaywitz offered a stronger critique of RTI, saying it causes school districts to move from "wait-to-fail" to "watch-them-fail."<sup>172</sup> They argue that RTI is simply a different type of discrepancy model, only now the discrepancy is between the "response of an individual student and his or her class or some other designated group (that will also vary across jurisdictions)."<sup>173</sup> Further, there is no agreement on how to measure gains made under RTI producing "different results and identify[ing] different children under the different non-consensual models that will be in use."<sup>174</sup>

As just one example of the unresolved complications with RTI, there is no understanding of even how to define "peer." Are peers of the same age, same grade, same school, same building, same school district, same state? What metric do we use to measure progress? Raw scores, growth scores, standard deviations? "The use of arbitrary metrics in research on response to any intervention in any setting often leads to inappropriate conclusions of progress."<sup>175</sup> The same child could be considered disabled in one classroom and not in another classroom under the vague definitions of "peer." As Reynolds and Shaywitz note, this "fundamentally alters the concept of disability at its roots. A disability is recognized as a psychopathological condition primarily associated with the individual. The RTI model focuses on the failure of a child-school interaction that is complex and modified by the overall achievement level of an individual classroom."<sup>176</sup>

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171. Cecil R. Reynolds & Sally E. Shaywitz, *Response to Intervention: Prevention and Remediation, Perhaps*, *Diagnosis No.*, 3 CHILD DEV. PERSPECT. 44, 44 (2009).

172 Cecil R. Reynolds & Sally E. Shaywitz, *Response to Intervention: Ready or Not? Or, From Wait-to-Fail to Watch-Them-Fail*, 24 SCH. PSYCHOL. Q. 130, 141 (2009).

173. *Id.* at 135.

174. *Id.*

175. *Id.* at 136.

176. *Id.* at 139.

Further, RTI is not truly a scientific approach despite being cloaked in science. As noted by Reynolds and Shaywitz, effective RTI requires an extensive case history and individual profile of each student. It also must include "critical elements of the process of effective implementation, for example, intensity (group size) and duration (minutes per day and length of intervention over time) that are currently guess-work and not evidence-based for RTI procedures."<sup>177</sup> Thus, it is not true that RTI is truly evidence-based.

Virginia Berninger also offers a critique of RTI, especially for students with dyslexia because of its failure to consider IQ when implementing the intervention strategy.<sup>178</sup> She argues that research using Verbal IQ as a predictive factor has shown that "Verbal IQ may be a prognostic indicator of what is a reasonable level of reading and writing achievement for dyslexics to attain by the adult years."<sup>179</sup> Because of the requirement that dyslexia reflects an "unexpected" difficulty in oral reading, she argues that an IQ score is relevant to diagnosis.<sup>180</sup>

Berninger makes an equity argument for why school psychologists should have available the use of diagnostic tests and be able to perform comprehensive assessments (rather than merely document response to intervention). Because outside psychologists are allowed to use such testing instruments, we could have "a two-class system of psychological services . . . with the more sophisticated services outside the schools only accessible by children whose parents can afford private services."<sup>181</sup>

Berninger recommends that school districts employ several approaches so that they can screen children to identify those students that are at risk, provide additional assessments to pinpoint processing deficits, and monitor progress for all at-risk students.<sup>182</sup> She argues that it is crucial that an initial screening "precede the implementation of intervention and subsequent assessment of response to intervention."<sup>183</sup> Of course, her approach would increase the cost of special education, not decrease it as hoped by some who proposed RTI, because she wants broad diagnostic testing *and* science-based response to intervention.

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177. *Id.* at 142.

178. Berninger, *supra* note 148, at 784-86.

179. *Id.* at 784.

180. *Id.* at 786.

181. *Id.* at 791.

182. *Id.* at 789.

183. *Id.* at 788.

Similarly, Dawn Flanagan and her colleagues argue that learning disability identification must include information gleaned from cognitive assessments.<sup>184</sup> But they do not use cognitive assessments in the ways they were used under the discrepancy model. Their work is based on modern intelligence theory as reflected in the Cattell-Horn-Carroll theory ("CHC").<sup>185</sup> CHC breaks cognitive ability into nine broad strata. Flanagan argues that this theory can provide a useful basis to pinpoint what is the psychological process that is impaired and which, in turn, leads to the academic deficit.<sup>186</sup> The purpose of cognitive testing is therefore not to determine a discrepancy between aptitude and achievement; the purpose is to *link* the cognitive deficit to the academic deficit so that effective remediation can occur.<sup>187</sup> As they note: "Given the historical predominance of the discrepancy model, evaluation of consistency may appear rather strange at first."<sup>188</sup> By breaking aptitude down into its components, they can look for consistency between a discrete aptitude and achievement. Unlike the traditional discrepancy model, they are not looking at a single-score IQ test result.

Like Berninger, Flanagan does not suggest getting rid of RTI. Instead, she argues that norm-referenced ability testing is very useful at the third or fourth tier of RTI. "RTI and norm-referenced ability testing are complementary, not competing, approaches."<sup>189</sup> But Flanagan's theory depends on the use of very particular testing instruments that are unlikely to be available in many school districts.

Reynolds and Shaywitz agree with Flanagan that aptitude should not be considered irrelevant to the diagnosis of a learning disability. They worry that the RTI model often leaves behind bright students who "still are performing below ability and share many qualities (e.g., phonological deficits) with lower functioning struggling readers."<sup>190</sup> They argue it "would be no fairer to leave out these bright struggling readers than it would be to leave out their lower functioning classmates."<sup>191</sup>

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184. Dawn P. Flanagan et al., *Integration of Response to Intervention and Norm-Referenced Tests in Learning Disability Identification: Learning from the Tower of Babel*, 43 PSYCHOL. SCHO. 807 (2006).

185. *Id.* at 817.

186. *Id.* at 820.

187. *Id.*

188. *Id.* at 821.

189. *Id.* at 824.

190. Reynolds & Shaywitz, *supra* note 172, at 138.

191. *Id.*

## V. A NEW DIRECTION

### A. Need for Early Identification

Both the discrepancy model and RTI are not inclusionary, diagnostic models in that they do not directly measure the existence of a neurological impairment that is impacting a student's ability to read. We need to develop models of direct measurement of the existence of a learning disability because students with learning disabilities in reading have precise, educational needs that cannot be addressed within the regular, educational classroom.

Students with a specific learning disability in reading are different from other slow readers in that their reading problems are due to a neurological impairment. According to G. Reid Lyon and his colleagues, images of adult dyslexic readers show "a failure of left hemisphere posterior brain systems to function properly during reading."<sup>192</sup> This "cannot be ascribed simply to a lifetime of poor reading."<sup>193</sup>

Studies have shown that it is nearly impossible to close the gap in "reading rate" between children with learning disabilities in reading and typical children if intervention takes place after second grade.<sup>194</sup> "During the time they are allowed to remain poor readers, they miss out on an enormous amount of text exposure and word-reading practices compared to average readers."<sup>195</sup> In order to remediate that deficit, one would need the reader with a learning disability to read *more* than their normally reading peers—"a daunting task."<sup>196</sup> But studies have demonstrated that if intensive intervention is instituted before second grade, that reading rate can be maintained at a normal level.<sup>197</sup> In other words, even intensive, late intervention cannot bridge the gap in reading rate between learning disabled and typical readers.

An inclusionary approach would intervene sooner, rather than wait for regular classroom instruction to fail these children. Although researchers

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192. G. Reid Lyon et al., *Defining Dyslexia, Comorbidity, Teachers' Knowledge of Language and Reading: A Definition of Dyslexia*, 53 ANNALS OF DYSLEXIA 1, 4 (2003).

193. *Id.* at 5.

194. Joseph K. Torgesen et al., *Intensive remedial instruction for children with severe reading disabilities: Immediate and long-term outcomes from two instructional approaches*, 34 J. READING DISABILITIES 33, 53 (2001).

195. *Id.*

196. *Id.*

197. *Id.* at 54.

disagree on exactly what tests should be administered to diagnose children as learning disabled in reading, there appears to be consensus that problems with mastering the phonological component of language are common in learning disabled reader.<sup>198</sup>

Theoretically, we could identify who has that impairment by trying to directly measure his or her phonological awareness in kindergarten or first grade. It would not be enough to know someone is a poor reader. We would want to know *why* the student is a poor reader. Many factors, other than phonological awareness problems, could explain that deficit. For example, a child could be struggling with reading because the child has an undiagnosed visual impairment or has trouble paying attention due to attention deficit disorder.

The development of diagnostic tools to predict who has an impairment that will negatively impact his or her ability to learn to read did not occur until the 1990s. "The typical readiness tests from the 1970s and 1980s . . . possessed a predictive validity of close to zero."<sup>199</sup> Today, there are effective screening measures of both phonological processing and the naming of letters but "precision of many of these measures for kindergartners remains far from perfect."<sup>200</sup>

Linda Siegel suggests that the best way to diagnose those with a reading disability is to give a pseudoword<sup>201</sup> reading test because that kind of test measures phonological awareness.<sup>202</sup> Further, she argues it "is important to know what words the child is having difficulty reading, what let-

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198. Fletcher et al., *supra* note 127 (citations omitted) ("It has been found that a common feature of nearly all poor readers is the deficient development of analytical strategies for moving to the word from the orthography. One source of the difficulty is that beginning readers and older poor readers do not readily grasp that words have a phonemic structure. Users of spoken language do not need to be aware of the parts of a word to speak and understand speech because the built-in speech apparatus processes them automatically. However, there is much evidence that children need to become aware of the parts of words to make the connection between speech and writing and to learn to use an alphabetic system to read and spell.").

199. Russell Gersten & Joseph A. Dimino, *RTI (Response to Intervention): Rethinking special education for students with reading difficulties (yet again)*, 41 *READING RES. Q.* 99, 100 (2006).

200. *Id.*

201. See NATALIE RATHVON, *EARLY READING ASSESSMENT: A PRACTITIONER'S HANDBOOK* 138 ("Pseudowords, sometimes called nonsense words, are pronounceable combinations of letters that conform to English spelling rules but that either are not real English words or occur with very low frequency . . . . Because pseudowords have no lexical entry, pseudoword reading provides a relatively pure assessment of childrens' ability to apply grapheme-phoneme knowledge in decoding . . . . Difficulty in pseudoword reading is also the single most reliable indicator of reading disabilities.").

202. Siegel, *supra* note 113, at 476.

ter-sound correspondences present problems for the child, what types of spelling errors are made . . . Remediation based on a detailed knowledge of the child's academic skills makes more sense than some extrapolation of what reading . . . should be, based on some imprecise IQ measure and an illogical discrepancy definition."<sup>203</sup> The inclusionary method would allow us to determine why a child is struggling with reading so that effective remediation could occur.

The discrepancy model for defining learning disability is an exclusionary model, because it presumes the existence of a learning disability when other explanations for the deficit are ruled out. It does not directly measure why the student struggles with reading. But the RTI model is also an exclusionary model. RTI attempts to exclude from classification as learning disabled those who *do* make academic improvements as a result of low-level intervention in the regular classroom. Again, there is no direct measure of a disorder in a neurological process. That deficit is inferred if the student does not respond to general classroom intervention.

This repeated use of exclusionary definitions is unique to the category of learning disabilities. Other disabilities, such as ADHD or receptive language disorders, which are also invisible, are not defined in exclusionary terms. This exclusionary approach is inherently inaccurate and needs to be replaced, if possible, by an inclusionary approach.

But whatever approach is selected must be based realistically on the kind of data that can be collected by classroom teachers as they perform the important job of teaching all the students in their class. School psychologists and other professionals who are familiar with the research literature in the field of educational psychology should have the job of screening students to determine if they are disabled.

## **B. Intervention**

The reason that early intervention is so important is that students with learning disabilities in reading need highly specialized reading programs that cannot be delivered in the regular classroom. Parents and advocacy groups strongly support the notion that children with dyslexia (or specific learning disability in reading) need "a systematic, multisensory, sequential phonics-based program with explicit instruction in phonolog-

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203. *Id.* at 477.



ical awareness, sound-symbol correspondence, syllables, morphology, syntax, and semantics.”<sup>204</sup> Based on the work of Samuel Orton and Anna Gillingham, from the 1930s and 1940s, this approach is usually called the Orton-Gillingham approach.<sup>205</sup> It is a resource-intensive approach that “need[s] to be taught on a daily basis and in either small groups or through one-to-one instruction.”<sup>206</sup> It relies on intensive repetition.

Although Orton-Gillingham is very popular among parents and advocacy groups, it is less popular among public education and special education programs.<sup>207</sup> “The intensive one-on-one instruction required, often for several hours a day, may not be practicable system-wide however, primarily because of budgetary and personal constraints which put it way beyond the scope of many schools.”<sup>208</sup>

A rigorous study completed by Joseph Torgesen and his colleagues was able to establish that children who were taught with intensive programs similar to Orton-Gillingham—what they called the “Auditory Discrimination in Depth Program” or the “Embedded Phonics” program—were able to make substantial improvement in reading, closing the gap with their nondisabled peers.<sup>209</sup> Both of Torgesen’s programs emphasized phonemic awareness but differed in their teaching methods.<sup>210</sup> The Auditory Discrimination program “placed primary instructional emphasis on building skills in phonemic awareness and phonemic decoding” whereas the Embedded Phonics program “taught these skills while placing more emphasis on their application while reading meaningful text.”<sup>211</sup>

The intensive reading programs described by Torgesen and his colleagues produced far better results than what was found in studies of other kinds of reading programs. Prior studies had found that reading

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204. Heidi E. Allen, *Understanding Dyslexia: Defining, Identifying, and Teaching*, 38 ILL. READING COUNCIL J. 20, 24 (2010).

205. *Id.*

206. *Id.* at 25.

207. See Noel Chia Kok Hwee & Stephen Houghton, *The effectiveness of Orton-Gillingham-based instruction with Singaporean children with specific reading disability (dyslexia)*, 38 BRITISH J. SPECIAL EDUC. 143, 143 (2011).

208. *Id.* at 144.

209. See Joseph K. Torgesen et al., *Intensive remedial instruction for children with severe reading disabilities: Immediate and long-term outcomes from two instructional approaches*, 34 J. READING DISABILITIES 33 (2001); Tessie E. Rose & Perry Zirkel, *Orton-Gillingham Methodology for Students with Reading Disabilities: 30 Years of Case Law*, 41 J. SPECIAL EDUC. 171, 173-74 (2007).

210. Torgesen, *supra* note 209, at 38.

211. *Id.*

programs failed to *accelerate* reading growth so that children with learning disabilities in reading continued to lag way behind their peers after intervention. By contrast, forty percent of the children in the Torgesen study were able to attain normal reading patterns by the end of the first year of their study and could be returned to regular instruction.<sup>212</sup>

A successful program, however, can be very resource intensive which has caused Torgesen and his colleagues to suggest: "Given this demonstration of the power of intensive instruction, we would assert that one major task for the educational establishment is to find ways to deliver both the quality and the intensity of instruction that many children seem to require."<sup>213</sup> Torgesen emphasizes, however, that the fact that forty percent of the children could be returned to the regular classroom after one year of intervention may mean there are "some significant economies associated with increased quality and intensity of instruction for these children."<sup>214</sup>

Scientific verification of teaching methodologies is important because the IDEA was amended in 2004 to require the choice of special education services to be "based on peer-reviewed research to the extent practicable."<sup>215</sup> The IDEA regulations also provide that children are supposed to be provided with "high-quality, research-based reading instruction in regular education settings" *before* being referred to special education.<sup>216</sup> Highly intensive intervention programs like Orton-Gillingham, however, cannot be provided in a regular education setting so a school district has few tools to assess the effectiveness of Orton-Gillingham for an individual child if regulations require that all "response to intervention" techniques occur in the regular classroom.

Until recently, some researchers argued that insufficient peer-reviewed studies had validated the effectiveness of the Orton-Gillingham method of instruction.<sup>217</sup> Due to the increasing need to validate the effectiveness of the Orton-Gillingham method, Noel Chi Kok Hwee and Stephen Houghton conducted an empirical evaluation of a one-year Orton-Gillingham instruction based reading intervention program in Singapore

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212. *Id.* at 45.

213. *Id.* at 56.

214. *Id.*

215. 20 U.S.C. § 1414(d)(1)(A)(i)(IV) (2006).

216. 34 C.F.R. § 300.309(b)(1) (2013).

217. See Kristen D. Ritchey & Jennifer L. Goeke, *Orton-Gillingham and Orton-Gillingham-Based Reading Instruction*, 40 J. SPECIAL EDUC. 171 (2006).

for seventy-seven children who were about six years old when the study began.<sup>218</sup> They reported that Orton-Gillingham “instruction has been found to be effective in bringing about positive improvements in the word recognition and word expression performance of Singaporean children with dyslexia, but not in their sentence reading performance.”<sup>219</sup> Their results were consistent with the results of other researchers who studied school classroom-based programs.<sup>220</sup> Nonetheless, their study included no control group and did not seek to assess an alternative intervention program.<sup>221</sup> Therefore, they could demonstrate the effectiveness of Orton-Gillingham but could not demonstrate that Orton-Gillingham was more effective than other approaches.

Because of the Matthew effect, it is crucial that intervention occur as early as possible. As Heidi Allen has said: “Schools and teachers need to ensure that intensive, explicit phonics instruction is provided in a small group or one-to-one setting, and the teachers providing this instruction must be properly trained in the methods of explicit, systematic phonics-based instruction.”<sup>222</sup>

The challenge is figuring out which students to target with intensive intervention, and to select an appropriate intervention program as soon as possible. Some poor readers will make year-to-year progress comparable to their classmates without targeted intervention whereas others will not. The chief problem with RTI and the discrepancy approach is that we do not offer poor readers an intensive program until they demonstrate they cannot make adequate educational progress without it. By then, we have watched them flounder or even fail.

It is worth emphasizing that one of the most rigorous studies to demonstrate the effectiveness of intervention does *not* support the kind of tiered approach recommended by RTI. The children in Torgesen’s study showed dramatic improvements *only* after they were classified as disabled and placed in a highly intensive learning environment. There is no empirical evidence that more modest interventions—such as those suggested by RTI’s tiered approach—produce positive effects for children with learning disabilities in reading. It is only at the most intensive

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218. Noel Chia Kok Hwee & Stephen Houghton, *supra* note 207.

219. *Id.* at 147.

220. *Id.*

221. *Id.*

222. Allen, *supra* note 204, at 26.

phase of intervention (under Orton/Gillingham or Torgerson) that intervention is effective.

## VI. CONCLUSION

Underlying the controversies about defining learning disabilities are broader normative questions about who we should be seeking to help with intensive classroom resources. When Congress enacted the Education for All Handicapped Children Act in 1975, it answered that question by saying we should devote additional resources to students who are “impaired” in a way that negatively affects their classroom performance. In 2001, when Congress enacted No Child Left Behind, it further answered that question by saying we should also devote additional resources to students who are not meeting age-appropriate standards even if they are not disabled. In addition, since 2004, Congress has allowed states to use up to fifteen percent of the resources allocated to the Individuals with Disabilities Education Act to the RTI process.<sup>223</sup> In 2004, Congress also began requiring school districts to have the option to use RTI—a concept initially developed to implement NCLB—to determine who has a learning disability. Thus, the distinction between NCLB and the IDEA became blurred as the two statutes came to share resources and even methodology.

The melding of the IDEA and NCLB creates three problems. First, the IDEA has a better intervention system than the NCLB for students with learning disabilities in reading because it is individualized. By imposing the RTI model (which was created under the NCLB) on the IDEA, we delay individualized intervention until generalized intervention is ineffective. Second, the IDEA does not merely seek to assist students who are performing significantly below grade level; it assists any student whose impairment causes an adverse educational effect. If RTI is allowed to become the sole mechanism for determining who has a learning disability in reading, we risk failing to offer individualized intervention to students with above-average aptitudes whose learning disability in reading is causing an adverse educational effect even if they are able to maintain close to grade-level performance. Third, NCLB presumes that short-term intervention can “solve” the student’s problems so that

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223. 20 U.S.C. § 1413(f)(1) (2006).

regular instruction can occur. But students with disabilities will always need accommodations. Short-term intervention is not a “cure.”

Although we need to reach more students with learning disabilities who have low aptitudes, we should not do so at the expense of students with above-average aptitudes. By analogy, students with above-average aptitudes who are visually impaired or hearing impaired receive individualized intervention because we know that those impairments create adverse educational effects. Students with learning disabilities in reading are no different. Their disability may be invisible (unless we conduct an MRI) but similarly causes adverse educational effects irrespective of their overall cognitive aptitude. The IDEA is supposed to remediate those adverse educational effects stemming from disabilities for all students, not merely those with below-average aptitudes.

Nonetheless, the solution to this tension between the IDEA and the NCLB is not to adopt *both* the discrepancy and RTI approaches to defining learning disabilities in reading because both approaches are problematic. Both RTI and the discrepancy model are exclusionary approaches to identifying students with disabilities. Only *after* we rule out explanations such as inadequate instruction (RTI) or general cognitive deficiencies (discrepancy model) do we institute intensive intervention. One can excuse that kind of error in the 1970s and 1980s when typical reading readiness tests had a predictive validity index close to zero, but that kind of error is inexcusable in the twenty-first century. We need to upgrade our approach to identifying learning disabilities in reading by developing modern, objective, inclusionary diagnostic instruments that are universally used in school systems as a preliminary screening device with appropriate follow-up testing.<sup>224</sup>

I am not an educational psychologist. I am not a research scientist. I am not a public school, classroom teacher. I am a law professor who tries to help children who are caught in the school system’s disability classification scheme, and who are not receiving appropriate interventions to

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224. The details of such a program are beyond my competency but I could imagine the following outline. A diagnostic test is given to all children at ages 5 through 7. The results of that broad screening are used to conduct more individualized screening for children who appear to be at risk for dyslexia. The screening could be similar to what some schools now use for identifying scoliosis. They might conduct a quick, rudimentary test in the school gymnasium and then suggest more intensive screening for those who are found to be at risk. See, e.g., *Scoliosis Screening*, WALTON COUNTY SCHOOLS, <http://www.walton.k12.fl.us/departments/health/pdf/scoliosis.pdf> (last visited July 27, 2013) (example of a scoliosis screening program). I leave the details to the experts. At present, we have not even gone down that path.

improve their educational performance. I have concluded that there is little connection between what scientists have learned about learning disabilities in reading and how the law defines that term. Meanwhile, children are the victims of this disconnect as they flounder in the new world of RTI where they are unlikely to receive sufficient individualized intervention in kindergarten through second grade, when they most need it.

It is time for this floundering to end. The United States Department of Education needs to convene a team of experts in the field of learning disabilities and arrive at a list of accepted diagnostic tools to diagnose learning disabilities in reading.<sup>225</sup> Nonetheless, I do not want to oversimplify the solution to this problem. Diagnostic testing is a problematic enterprise because children come to school with a variety of life experiences. The harm done by IQ testing, and the ranking of people on the basis of their supposed genetic abilities,<sup>226</sup> should not be repeated as part of an exercise to determine who has a learning disability in reading. We do not want children classified as learning disabled merely because they have not been exposed to sufficient pre-literacy training so that they can identify letters and sounds. Diagnostic instruments chosen to screen for learning disabilities in reading need to take into account the extent of the child's exposure to letter, words, and various kinds of reading material. Interpretation of results must occur in the context of other information we have about the child's life so as not to mistake a lack of exposure to reading education with a learning disability.<sup>227</sup> In that sense, some aspects of an exclusionary approach (i.e., ruling out other explanations) must accompany a direct, inclusionary approach.

The difficulty of developing and implementing appropriate diagnostic instruments, however, is not an excuse for failing to try. Current federal educational policy presents no model for identifying the characteristics of learning disabilities in children. It merely implies the existence of a learning disability after other explanations are excluded. Appropriate diagnostic instruments need to be universally administered to all chil-

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225. Sally Shaywitz provides an excellent description of evaluation instruments that can be used to identify children who are at risk of dyslexia. See Shaywitz, *supra* note 3, at 142-49. The challenge is to find large-scale assessment tools that can be provided in kindergarten with more targeted testing to those who appear to be at risk of dyslexia.

226. See generally STEPHEN JAY GOULD, *THE MISMEASURE OF MAN* (1981).

227. This kind of approach is used for what the IDEA regulations term "mental retardation." Test scores are assessed in relationship to observations about adaptive: "Mental retardation means significantly subaverage general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period, that adversely affects a child's educational performance." 34 C.F.R. § 300.8(c)(6) (2013).

dren in kindergarten, first and second grade so that they can be screened and identified as learning disabled, and receive an individualized educational program as soon as possible. We cannot afford to fail. We cannot stand by and watch both children and our school system fail.

We have come a long way since quack science formed the basis for a mandatory sterilization movement where we sought to scourge society from those who were thought to be morons or imbeciles.<sup>228</sup> Today, we truly seek to educate all children with disabilities so that they can be independent, productive members of society.<sup>229</sup> Yet, by failing to sufficiently employ scientific principles in identifying which children are learning disabled as early as possible, we once again fail to harness science in a way that might be beneficial to those with disabilities. Maybe this time we can get it right.

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228. See generally J. DAVID SMITH, *GOOD BLOOD, BAD BLOOD: SCIENCE, NATURE, AND THE MYTH OF THE KALLIKAKS* (2012).

229. See 20 U.S.C. § 1400(c)(1) (2006) ("Improving educational results for children with disabilities is an essential element of our national policy of ensuring equality of opportunity, full participation, independent living, and economic self-sufficiency for individuals with disabilities.").

